

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K14/575 C07K14/605 A61K38/26 A61P3/10 //C12N5/06,
A61K47/48

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K A61K C07D C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, CHEM ABS Data, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category ^a	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 43708 A (MADSEN KJELD ;NOVONORDISK AS (DK); HUUSFELDT PER OLAF (DK); KNUDSE) 2 September 1999 (1999-09-02) claim 89 ---	1-78
X	WO 01 32158 A (SQUIBB BRISTOL MYERS CO ;PIPER BETH ANNE (US)) 10 May 2001 (2001-05-10) claim 69 ---	1-78
X	US 6 358 924 B1 (HOFFMANN JAMES ARTHUR) 19 March 2002 (2002-03-19) claim 11 ---	1-78
X	WO 01 04156 A (LARSEN BJARNE DUE ;NEVE SOEREN (DK); MIKKELSEN JENS DAMSGAARD (DK)) 18 January 2001 (2001-01-18) claims 1-48 ---	1-78
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

^a Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"Z" document member of the same patent family

Date of the actual completion of the international search

30 September 2003

Date of mailing of the international search report

22. 10. 2003

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	EP 1 329 458 A (ZEALAND PHARMA AS) 23 July 2003 (2003-07-23) claim 6 ---	1-78
X	ANDREW A. YOUNG ET AL: "Studies in Obese Diabetic (ob/ob, db/db) Mice, Diabetic Fatty Zucker Rats, and Diabetic Rhesus Monkeys (Macaca mulatta)" DIABETES, vol. 48, May 1999 (1999-05), pages 1026-1034, XP002256109 figures 1,2 ---	1-78
X	LISA JUNTTI-BERGGREN ET AL: "The Antidiabetogenic Effect of GLP-1 Is Maintained During a 7-Day Treatment Period and Improves Diabetic Dyslipoproteinemia in NIDDM Patients" DIABETES CARE, vol. 19, no. 11, November 1996 (1996-11), pages 1200-1206, XP002256110 figure 1 ---	1-78
X	DAVID G. PARKES ET AL: "Insulinotropic Actions of Exendin-4 and Glucagon-Like Peptide-1 In Vivo and In Vitro " METABOLISM, vol. 50, no. 5, May 2001 (2001-05), pages 583-589, XP002256111 figure 2 ---	1-78
A	RÉMY BURCELIN ET AL: "Long-Lasting Antidiabetic Effect of a Dipeptidyl Peptidase IV-Resistant Analog of Glucagon-Like Peptide-1" METABOLISM, vol. 48, no. 2, February 1999 (1999-02), pages 252-258, XP002256112 figures 1,2 ---	1-78
A	U RITZEL ET AL: "A synthetic glucagon-like peptide-1 analog with improved plasma stability" JOURNAL OF ENDOCRINOLOGY, vol. 159, 1998, pages 93-102, XP002256113 figures 3,4 ---	1-78
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DORIS A. STOFFERS ET AL: "Insulinotropic Glucagon-Like Peptide 1 Agonists Stimulate Expression of Homeodomain Protein IDX-1 and Increase Islet Size in Mouse Pancreas"</p> <p>DIABETES, vol. 49, May 2000 (2000-05), pages 741-748, XP002256114 figure 3</p>	1-78
A	<p>--- US 6 344 180 B1 (HOLST J J ET AL) 5 February 2002 (2002-02-05) claims 1-13 -----</p>	1-78

INTERNATIONAL SEARCH REPORT

International application No.
PCT/DK 03/00463

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 1-78
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.1

Claims Nos.: 1-78

Claims 1-78 relate to methods of treatment of the human or animal body by surgery or by therapy or diagnostic methods practiced on the human or animal body (PCT Rule 39.1(iv)).

The wording "drug holiday" is defined (Description, page 11, lines 29-30) as the time interval between a first endpoint (start) and a second endpoint (finish). Claim 1 seems to comprise such definition by the wording "...without the continuous presence of the molecule".

According to W099/43708, the use of GLP-1 derivatives and exendin for the treatment of diabetes is known (See claim 89- W099/43708). Therefore, the term "drug holiday" appears to be unclear if it referring to the dose administrated, in that case the claims 40-78 comprise also therapy or diagnostic methods practiced on the human or animal body (PCT Rule 39.1(iv)).

Consequently, a search has been carried out for on the alleged effects of the compounds or compositions for GLP-1 derivatives and exendin. Further, the search has covered the general aspects of the invention to some extent, although it lacks the necessary precision in the definition of the subject matter due to the large quantity of material known within GLP-1 and exendin derivatives.

The search for the general concept of GLP-1 derivatives and exendin will retrieve a pertinent document only if this concept is described in general terms in a reference. Specific solutions previously known and falling under the general concept - but failing to mention this fact - are likely not to be revealed in such a search.

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